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Statement submitted by International Union of Economists, a non-governmental organization in consultative status with the Economic and Social Council

The Secretary-General has received the following statement, which is being circulated in accordance with paragraphs 30 and 31 of Economic and Social Council resolution 1996/31.

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Statement

Ways of ensuring global energy security

Mankind has at its disposal enough intellectual, material, technological and natural resources to cope with the arising threats. But we have to realize that the brewing crisis can be solved spontaneously, as a consequence of severe socio-economic disturbances, or in a soft form, as a result of coordinated actions aimed at ensuring the global stability and energy security. The latter will require working out and consistently implementing on the inter-state level an anti-crisis energy policy supported by business and population.

The task of selecting the strategic directions cannot be strictly formalized so far, and is being solved by the experts by applying models and other instruments for evaluating certain aspects of the strategy. Currently, research is under way on the following strategic directions of increasing the energy security: economical and ecologically responsible use of energy; accelerated growth of supply of the commercially efficient energy resources; diversification of the kinds of energy; creating the infrastructure of the global energy market; decentralizing the energy supply.

Each of these directions will require for their realization the powerful technological advances and significant change in the existing structure of the global energy industry, ways of organization and rules of the energy markets functioning.

Economic and ecologically responsible use of energy. This could lift practically all the threats to the global energy security (except terrorism). This strategy includes first of all the organizational technological energy supply, i.e. reducing the loss of energy on all the stages of its transformation – from the primary sources to the final use for production and household needs. Measures aimed at economical and ecologically responsible use of energy should be based on the consistent policy of ensuring the energy efficiency with the application of the price, taxation and other mechanisms of promoting the measures.

This strategy envisages utilization of all kinds of material resources used in production and household and energy-saving way of life, which means moderate growth in the developed countries of the most energy-consuming living demands of the people (food, housing, transport). Such a change in the way of life seems to be the most effective but the most difficult for realization of that strategy.

Being the leaders of the technological progress, the industrially developed countries must significantly step up the international activities aimed at increasing the energy efficiency. Alongside with the intensification of the transfer of modern technologies, harmonization of the energy consumption standards, coordination of the energy marking of the products, etc. also should be noted. These measures are to be implemented by the global information campaign in the sphere of energy efficiency using the mass media for the advertising the energy-saving way of life.

Accelerated growth of supply of the commercially efficient energy resources. This is an effective means of countering such threats to the global energy security as the obvious backlog of the energy supply from the growing energy consumption, growing stress in meeting the energy demand for transport and growing regional energy disproportions. The major problem consists in creating preconditions for extracting energy resources rather than in their physical deficit.

Besides mobilizing investments for the successful realization of this strategy it is necessary to maintain on all levels, including the international one, the development and commercialization of technologies capable of expanding the supply of energy resources with the reduction of time and cost of their development. Here are the main ones:

Technologies for the advance preparation of the hydrocarbon deposits (including, if necessary, non-traditional sources), *the relevant capacities and infrastructure for extracting and processing.*

Technologies of nuclear energy industry with reactors on thermal neutrons and transfer to the closed nuclear fuel cycle. Development of the nuclear energy industry on the basis of the more sophisticated types of thermal reactors will increase the energy supply and will become the transit form from the present hydrocarbon to the future large-scale nuclear energy industry, with the fast neutron reactors, closed fuel cycle and utilizing the nuclear fuel wastes. This will make the nuclear energy industry the practically renewable source of energy, ensure non-proliferation of nuclear weapons, minimize the radioactive wastes and optimize the economy of the industry. The necessary condition for the large-scale development of the nuclear energy industry is realization of the nuclear cycle when the consumer of final products (electric power, heat, drinking water or hydrogen) is not restricted with international limitations on using the critical nuclear materials and technologies.

Commercially efficient technologies of using ecologically safe renewable sources of energy (biomass, solar and wind energy, etc.). Their development will not only expand the energy supply but bring down the ecological stress as well.

The industrial development of the thermal nuclear energy.

Diversification of the kinds of energy. This is necessary on all the stages of its transformation both for attaining the general stability of energy supply and for relieving the stress in oil supply and regional energy disproportions.

There are a few directions within this strategy.

1. Increased consumption of natural gas.
2. Supporting ecologically pure technologies of using coal.
3. Accelerated development of atomic energy industry and renewable energy sources.
4. Substitution of the oil motor fuels at the transport.
5. Development of the systems of switching to the alternative kinds of fuel.

Development of the infrastructure of the global energy market. This suggests gradual formation of inter-state, inter-continental and trans-continental energy corporations: the electric power and gas ones and their symbioses. Such an infrastructure should operate according to unified technological standards and management rules.

Within the integrated systems the diversification of supply and demand of the energy resources (including their importing and exporting) will grow while the degree of concentration of the market will go down. Integration will significantly strengthen the long-term energy security, open up the access to the competitive sources of fuel and increase the reliability of the systems, which is crucial for countering the threats of the growing regional energy disproportions and disruptions in energy supply. Significant organizational efforts and expenses on realization of this direction will pay back within the acceptable period of time due to reductions in costs and risks of energy supplies.

The priority tasks in establishing the global energy market are:

- creating the infrastructure of the global natural gas market by advance growth of capacities for production, transporting and using condensed natural gas;
- construction of the inter-continental gas pipe lines;
- formation of the uniform standards and the system of technological control of the gas transporting modes aimed at increasing their stability and reliability.

In order to cope with the short-time disruptions in energy supply it is necessary to have the global system of fuel reserves. It has to include:

- storages of oil and oil products in the regions of their concentrated consumption ensuring the compensation of seasonal irregularity of demand and supply in case of emergency situations;

- storages of condensed and natural gas for seasonal regulation;
- storages of different kinds of hard fuel on the power stations of seasonal regulation;
- means of managing the reserves (including changes in power stations loading when using different kinds of energy resources), which are expected to efficiently compensate the emergency disruptions and the weather fluctuations of energy resources supply and to reduce the fuel price fluctuations in the regions and in the world as a whole.

Decentralization of the energy supply. This, in the form of local and individual energy sources working on stored energy resources, can the most efficiently counter the disruptions in energy supply as a result of technogenic catastrophes and systemic disasters. Besides, the decentralized energy industry can make a significant contribution in fighting the energy scarcity and regional disproportions in the development of energy industry.

Establishing inter-state and trans-continental energy corporations with the simultaneous advanced development of the local and individual energy sources will ensure the operational reliability, viability and stability of the world energy industry.

The great role in the realization of the strategy of decentralization of the energy supply has to be played by the increased efficiency of the local and individual energy sources and by the development of the technologies of distributed energy generation including the automatic micro- and mini-electric power stations combined with the heat generators or air-conditioners capable of operating on different kinds of fuel with the efficiency coefficient of up to 70%, solar and wind electric power generators with accumulators functioning independently of the energy systems, smaller hydro- and geo-thermal power stations.

Ensuring the global energy security seems to be impossible without the dialogue and mutual openness on the level of states, businesses and population. The important mission belongs to science and technology. The whole number of research directions and pilot projects should receive a priority and international support. It is time for the governments to pay attention at the insufficient financing of scientific and practical projects in the sphere of energy and to create stimuli for accelerating them while promoting partnership with private companies.

The most difficult for the public opinion should be admitting the necessity to limit (first of all for the population of the developed countries) the existing largely energy-wasting way of life. As soon as the level of living standards of the present "golden billion" will in a couple of decades be reached by three more billions of people living in Brazil, the Russian Federation, India and China, the current level of energy consumption will make the pressure on the world energy industry unbearable with any real pace of the scientific and technological progress.

In its turn, the development of technologies puts forward difficult problems before the society. Admission of necessity to create the large-scale atomic energy industry is inevitable. Many of the habits of the personal energy consumption – from filling the car fuel tank (hybrid engines, using methanol, compressed and condensed gas and subsequently hydrogen) to the individual energy supply of houses and smaller businesses will have to be changed. The change of paradigm of the energy development is impossible without solving the complicated scientific and technological tasks and spending huge material resources. All this will require greater openness and free flow of information, technologies and capitals.